

CLAIMS:

1. A signal processing device for a sensor output signal from a sensor covered by a color mask pattern having a plurality of colors, the signal processing device comprising:

a reconstruction unit (5) for generating a plurality of color signal values (R, G, B) for each pixel from the sensor output signal; and

5 a clipping device (8) for clipping the sensor output signal or the plurality of color signal values (R, G, B).

2. The signal processing device according to claim 1, further comprising:

10 a conversion unit (6) for generating luminance signals (Y) and chrominance signals (U, V) from the plurality of color signal values (R, G, B); and

an adjustment unit (10) for selectively setting the chrominance signals (U, V) to a zero color difference when clipping is performed (8).

3. The signal processing device according to claim 2, wherein the clipping device (8) is arranged between the sensor (3) and the reconstruction unit (5), and wherein the signal processing device further comprises a single bit white clip delay unit (11) for generating a switch signal for the adjustment unit (10), the switch signal comprising an at least 2x2 bit array from, or at least in response to, a signal (SS) from the clipping device (8) indicating that clipping has occurred.

4. The signal processing device according to claim 3, wherein the reconstruction unit (5) comprises a contour processor, which, in the reconstruction of a specific pixel, includes surrounding pixels, and wherein the single bit white clip delay unit (11) comprises an N X M single bit contour processor off signal generator.

5. The signal processing device according to claim 1, wherein a preprocessor (4) is arranged between the sensor (3) and the reconstruction unit (5), said pre-processing unit (4) comprising an additional clipping device to limit the dynamic range of the amplitude of the

sensor output signal, where a clipping level of the clipping device (8) is lower than a clipping level of the additional clipping device in the preprocessor (4).

6. The signal processing device according to claim 5, wherein the preprocessor (4) further comprises at least one of the units from the group, which comprises an automatic gain control circuit for low light conditions, an analog-to-digital converter, a sampling circuit, and a correlated double sampling circuit for sensor noise reduction.

7. The signal processing device according to claim 1, wherein the clipping device (8) is arranged in the analog path from the sensor (3) to a subsequent analog-to-digital converter (ADC).

8. The signal processing device according to claim 1, wherein the clipping device (8) is arranged for selective clipping, when the sensor output signal or the plurality of color signal values (R, G, B) exceeds a predetermined clipping level corresponding with a maximum sensitivity of the sensor (3), such as the maximum electron charge capacity.

9. A method of processing a sensor output signal from a sensor (3) covered by a color mask pattern having a plurality of colors, the signal processing method comprising:
reconstructing (5) a plurality of color signal values for each pixel from the sensor output signal; and
clipping (8) the sensor output signal or the plurality of color signal values.

10. A camera, comprising:
a sensor (3); and
the sensor output signal processing device of claim 1.